

Pedestrian Safety

Initiative Meeting #7
October 12th, 2010

CountyStat Principles

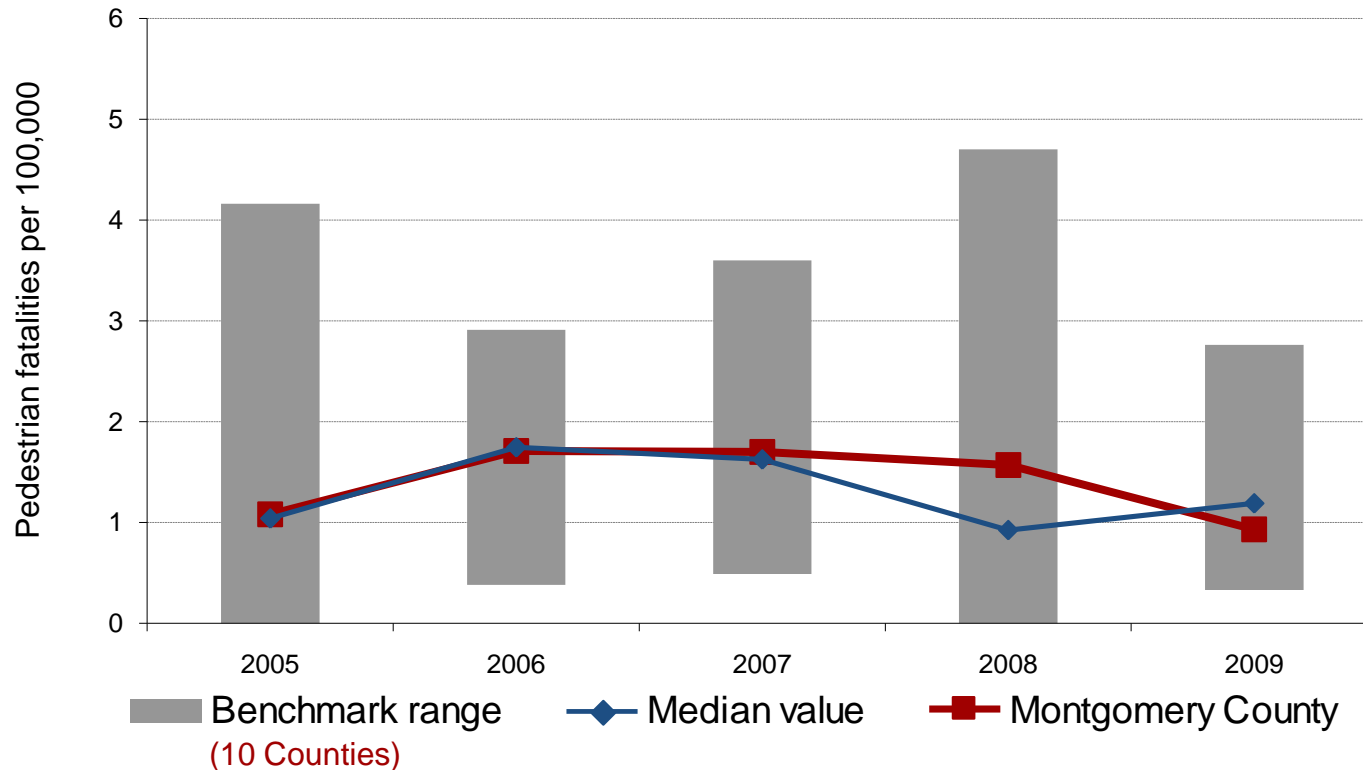
- **Require Data Driven Performance**
- **Promote Strategic Governance**
- **Increase Government Transparency**
- **Foster a Culture of Accountability**



Agenda

- **Introductions**
- **Overview of Countywide Pedestrian Collision Data**
 - Pedestrian Fatalities Indicator
 - Pedestrian Collisions
- **High Incidence Area Strategy Update**
- **Safe Routes to School Strategy Update**
- **Traffic Calming Strategy Update**
 - Update on Collisions
 - Programmatic Updates
 - Expenditure Updates
 - Planned Improvements
 - Successes and Lessons Learned



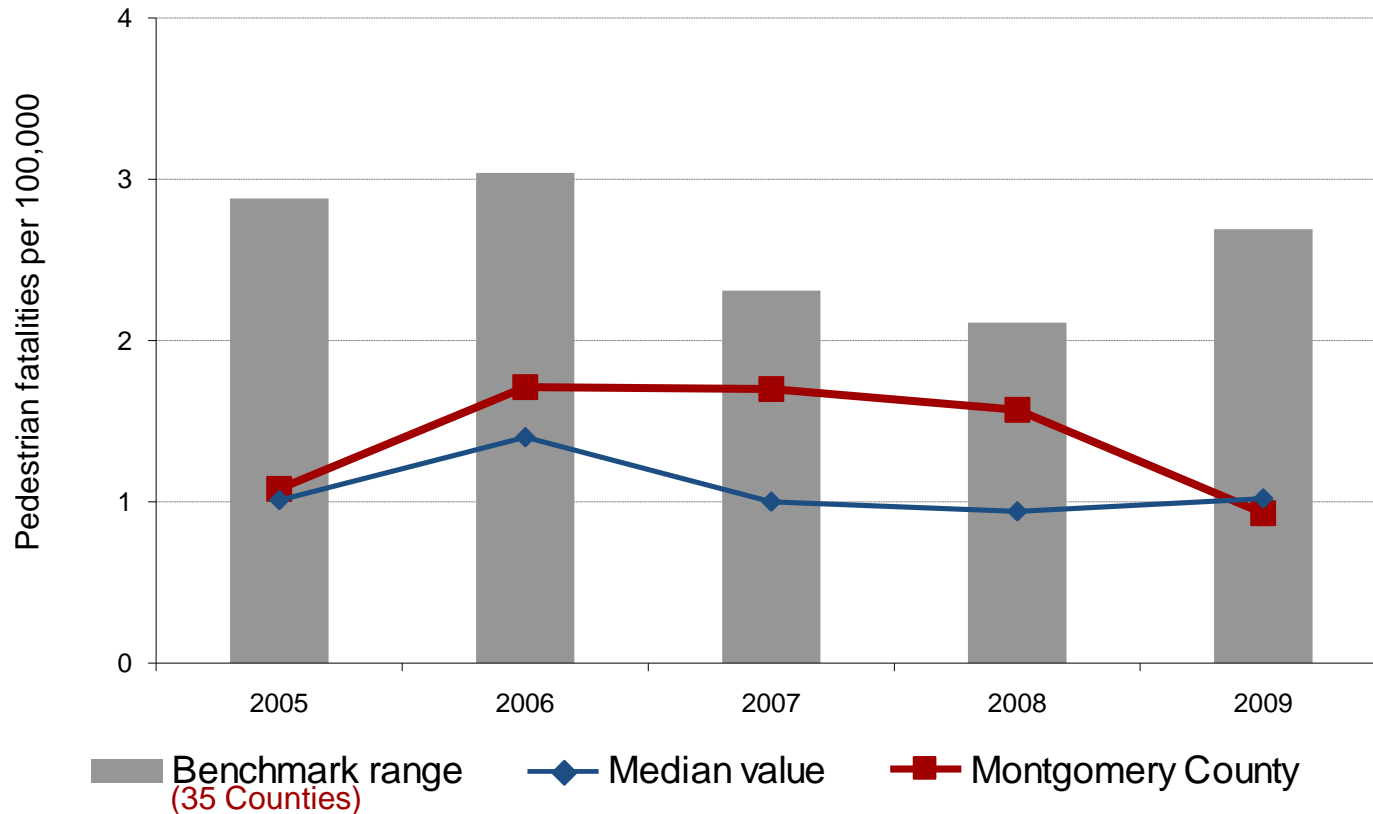
Safe Street and Secure Neighborhoods**Indicator: Pedestrian fatality rate per 100,000 population**

In 2009, the median pedestrian fatality rate was 1.19 fatalities per 100,000 people. Montgomery County's rate was .93.
In 2009, the highest value was 2.76 and the lowest value was 0.3.

Source: National Highway Traffic Safety Administration: Fatality Analysis Reporting System

Data may vary from local jurisdiction's reported figures



Safe Street and Secure Neighborhoods**Indicator: Pedestrian fatality rate per 100,000 population**

In 2009, the median pedestrian fatality rate was 1.02 fatalities per 100,000 people. Montgomery County's rate was .93.

In 2009, the highest value was 2.69 and the lowest value was 0.0.

Source: National Highway Traffic Safety Administration: Fatality Analysis Reporting System

Data may vary from local jurisdiction's reported figures



Montgomery County Pedestrian Collisions and Fatalities

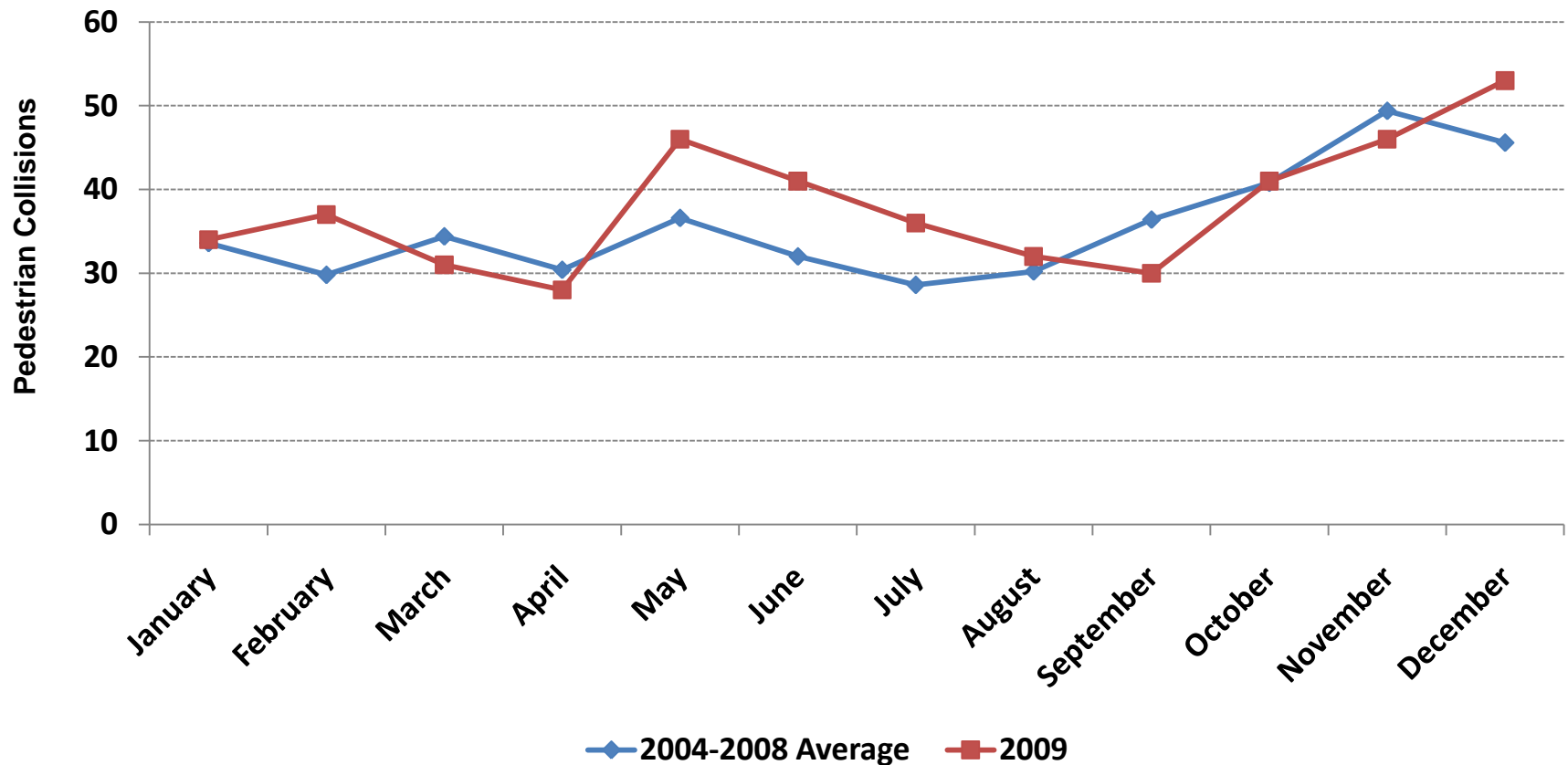
	2004	2005	2006	2007	2008	2009	2010*
January	21	36	31	32	48	34	35
February	30	28	28	33	30	37	38
March	36	37	28	34	37	31	34
April	32	26	25	35	34	28	33
May	39	27	36	34	47	46	33
June	33	41	33	29	24	41	33
July	33	24	29	20	37	36	31
August	24	28	37	26	36	32	22
September	31	39	39	38	35	30	36
October	46	48	42	37	31	41	N/A
November	52	48	49	60	38	46	
December	43	52	52	34	47	52	
Total Collisions	420	434	429	412	444	454	295
Per 100,000	45.6	46.7	45.9	43.8	46.6	46.8	N/A
Total Fatalities	14	10	18	17	19	14	N/A
Per 100,000	1.5	1.1	1.9	1.8	2.0	1.4	

Source: Population estimates based on US Census data

* 2010 data is preliminary and not included in this analysis



Montgomery County Pedestrian Collisions



MCPD Reflections: Overall, the monthly trend in collisions is consistent with the overall average trend.

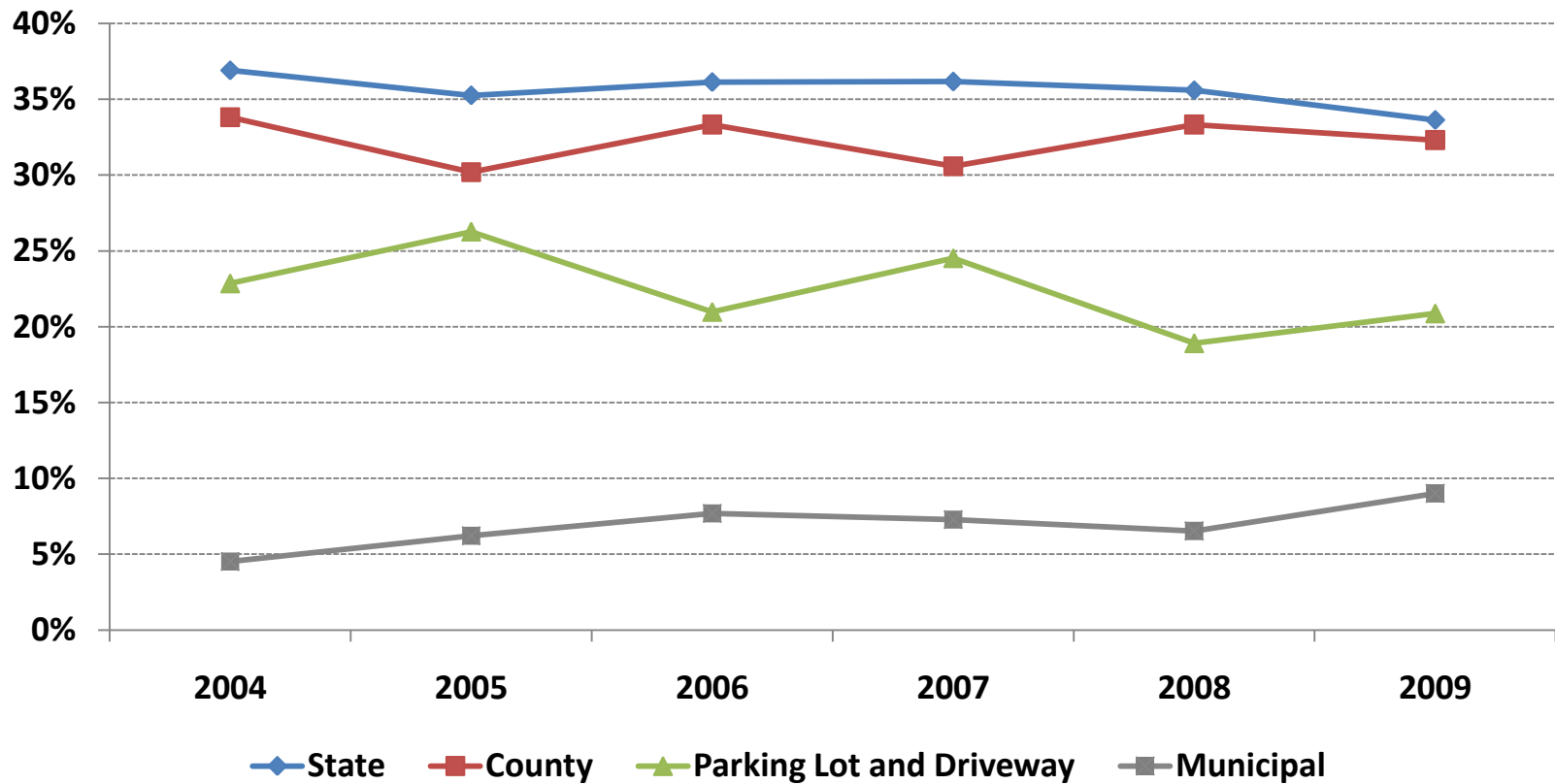


Pedestrian Collisions by Controlling Jurisdiction

Controlling Jurisdiction	2004	2005	2006	2007	2008	2009
State	155	153	155	149	158	153
County	142	131	143	126	148	146
Parking Lot/ Driveway	96	114	90	101	84	95
Municipal	19	27	33	30	29	41
All other	8	9	8	6	25	19
Total Number	420	434	429	412	444	454



Percentage of Pedestrian Collisions by Controlling Jurisdiction



MCPD Reflections: The percentage of pedestrian collisions by controlling jurisdictions is consistent over time and location type.



Strategies to Address Geographic Trends: Parking Lots

“Parking Lots are Danger Zones!” campaign kicked off on October 29th 2009

- Outfitted 40 Ride On buses with exterior ads and 200 with interior ads
- Created movie slides shown prior to movie previews in the theater
- Distributed flyers to senior centers, grocery stores, and apartment buildings
- Held press event that gathered widespread media attention
- Conducted informal focus groups with seniors to learn more about their perceptions of parking lot safety



Ride On Bus Sign



Signage Example

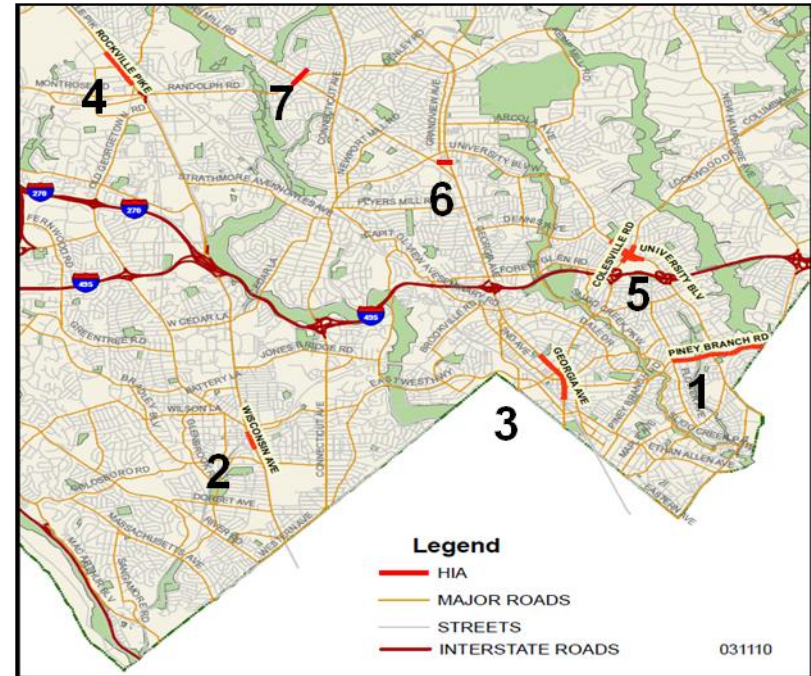


Parking Lot Pedestrian Safety Flyer



High Incidence Areas Strategy Overview

- Targets funding for engineering, education, and enforcement (the 3 Es) where it can have the greatest effect on reducing pedestrian collisions
- The highest rate of pedestrian collisions is along State roads, so this strategy engages the State in targeting pedestrian safety activities within the County where the rate of collisions and severity are highest
- Creates opportunities to leverage multiple projects in target areas with cost-sharing between multiple agencies



- | | |
|--------------------|-------------------|
| 1. Piney Branch Rd | 4. Rockville Pike |
| 2. Wisconsin Ave | 5. Four Corners |
| 3. Georgia Ave | 6. Reddie Dr |
| | 7. Randolph Rd |



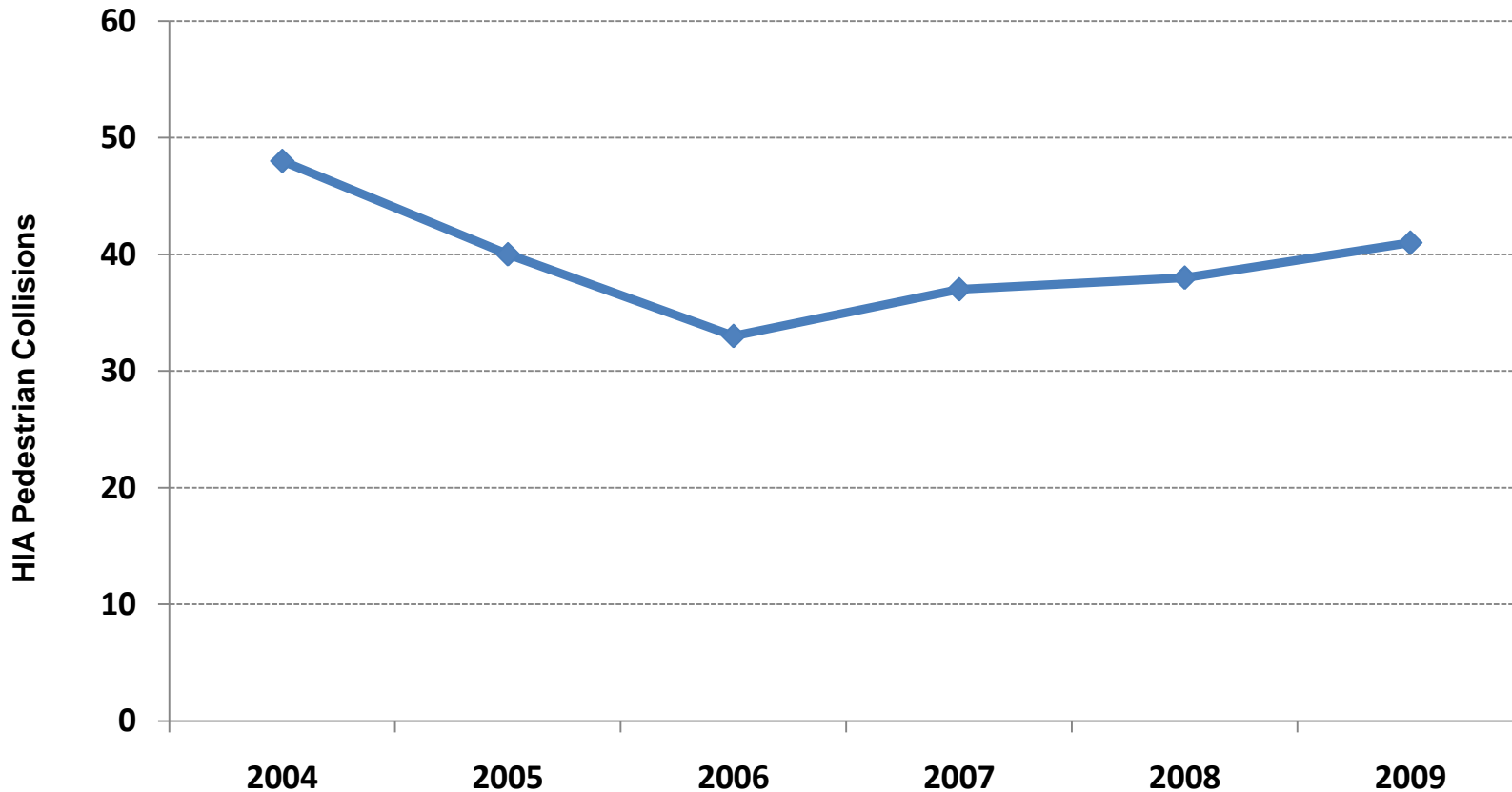
Collisions in High Incidence Areas

High Incidence Area	Date of PRSA Audit	Number of Pedestrian Collisions						
		2004	2005	2006	2007	2008	2009	TOTAL
Piney Branch	Oct 2008	14	10	10	8	7	8	57
Wisconsin Ave	Dec 2008	8	6	6	10	3	4	37
Georgia Ave	Mar 2009	13	4	7	5	7	10	46
Rockville Pike	June 2009	4	11	4	3	9	8	39
Four Corners	Jan 2010	2	4	4	7	5	0	22
Reedie Drive	Apr 2010	4	2	0	3	3	7	19
Randolph Road	Sep 2010	3	3	2	1	4	4	17
Total		48	40	33	37	38	41	

Currently, improvements are not completed in many of the High Incidence Areas



Collisions in High Incidence Areas: Annual Trend



DOT Reflections: The majority of the improvements are just now entering the implementation phase making it difficult to render a definitive conclusion of the impact of HIA improvements.



High Incidence Areas: Piney Branch Road

Background

- 1st HIA: Piney Branch Road from Flower Avenue to the Prince George's County/Montgomery County line
- PRSA conducted in Oct. 2008

Observations

- Many mid-block crossings
- Pedestrian at fault in most crashes
- Limited roadway lighting
- Narrow sidewalks



**2008 and 2009 Pedestrian Collision Comparison
In and Around the Piney Branch HIA**



2004	2005	2006	2007	2008	2009	Total
14	10	10	8	7	8	57



Piney Branch HIA: Planned Improvements

Improvement	MCDOT	MDSHA	Status
Short term improvements (0-6 months) –Fix pedestrian push buttons –Repair streetlights and bus shelter lights –Trim foliage –Enhanced signing –Re-stripe / modify crosswalks –Enact turn restrictions –Modify signal timing	X X X	 X X X X X	Done Done/In Progress Done Done Done/In Progress In Progress Done
Mid term improvements (6-18 months) –Pedestrian refuge islands –Extending median –Enhanced / additional lighting –Install pedestrian buffers – fences –Minor sidewalk enhancements –Traffic enforcement & education	X X X X X	X X X X	In Progress In Progress In Progress In Progress Done/In Progress Ongoing
Long term improvements (18+ months) –Relocating / modifying business access points –Major sidewalk enhancements –Reconstruct / modify traffic signals	 X	X X	Pending Done/In Progress Done/In Progress

- **Work to be completed as part of current SHA projects**
- **Done/In Progress = At least one but not all projects completed**



High Incidence Areas: Wisconsin Avenue

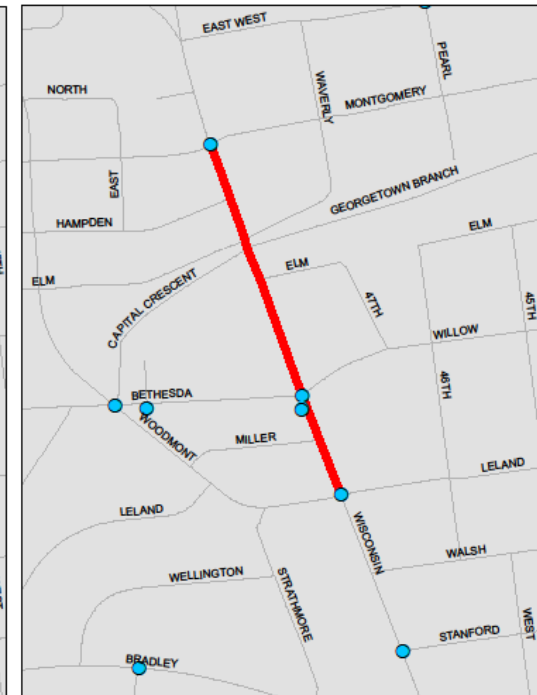
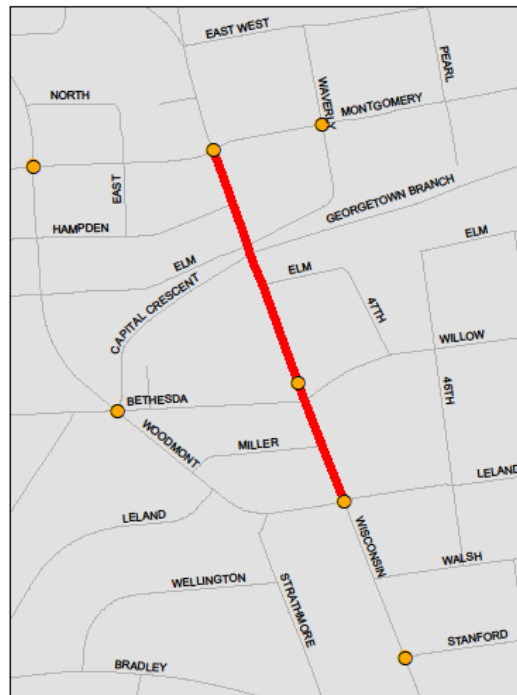
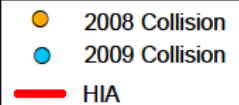
Background

- Wisconsin Ave from Montgomery Ave to Leland Ave in Bethesda CBD
- PRSA conducted in Dec 2008

Observations

- Drivers at fault in most crashes
- Crashes mostly at intersections
- Most crashes involved turning vehicles
- High concentration at Montgomery Ave

**2008 and 2009 Pedestrian Collision Comparison
In and Around the Wisconsin Avenue HIA**



2004	2005	2006	2007	2008	2009	Total
8	6	6	10	3	4	37



Wisconsin HIA: Planned Improvements

Improvement	MCDOT	MDSHA	Status
Short term improvements (0-6 months) <ul style="list-style-type: none"> – Upgrade signing – Re-time pedestrian signal clearance times – Re-stripe worn markings – Relocate trash cans / newspaper boxes 	X X X	X X	Done/In Progress In Progress Done/In Progress Done
Mid term improvements (6-18 months) <ul style="list-style-type: none"> – Upgrade/ add street lighting – Relocate crosswalks / ramps – Upgrade to countdown pedestrian signals – Modify corner radii –Traffic enforcement –Pedestrian education program 	X X X X X X	 X X X	In Progress In Progress In Progress In Progress Ongoing In Progress
Long term improvements (18+ months) <ul style="list-style-type: none"> – Reconstruct traffic signal – Reconstruct Montgomery Ave. Intersection – Widen sidewalks 	X X X	X X X	Pending Pending Pending

- **Work to be completed as part of current SHA projects**
- **Done/In Progress = At least one but not all projects completed**



High Incidence Areas: Georgia Avenue

Background

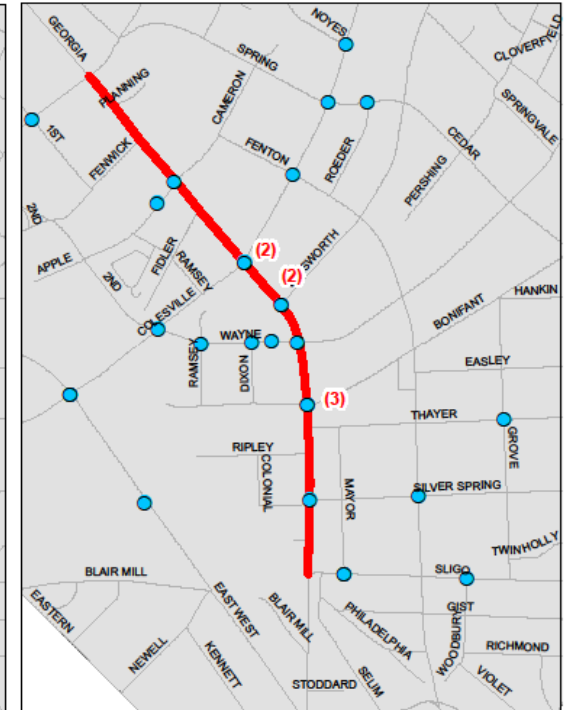
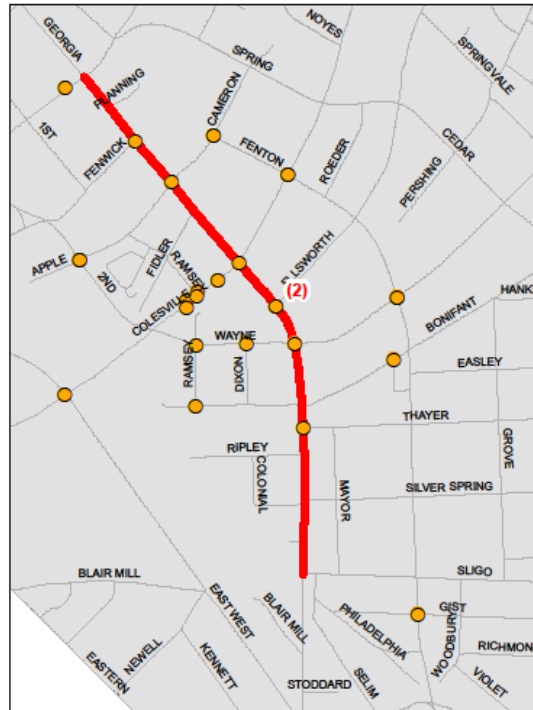
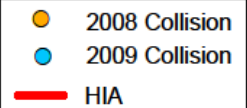
- Georgia Avenue from to Spring Street to Sligo Avenue in Silver Spring CBD
- PRSA conducted in March 2009

Observations

- Primary conflicts are between crossing pedestrians and turning vehicles
- Both drivers and pedestrians fail to obey traffic rules



**2008 and 2009 Pedestrian Collision Comparison
In and Around the Georgia Avenue HIA**



2004	2005	2006	2007	2008	2009	Total
13	4	7	5	7	10	46



Georgia Avenue HIA: Planned Improvements

Improvement	MCDOT	MDSHA	Status
Short term improvements (0-6 months) –Removing sidewalk obstructions –Repair streetlights and bus shelter lights –Trim foliage –Enhanced signing –Re-stripe / modify crosswalks –Enact turn restrictions	X X X	 X X X X	Done Done/In Progress Done In Progress In Progress In Progress
Mid term improvements (6-18 months) –Install curb extensions –Extending median –Enhanced / additional lighting –Upgrade to countdown pedestrian signals –Minor sidewalk enhancements –Pedestrian education program –Traffic Enforcement	X X X X X	X X X X 	In Progress In Progress In Progress In Progress In Progress Ongoing Ongoing
Long term improvements (18+ months) –Relocating / modifying business access points –Major sidewalk enhancements –Reconstruct / modify traffic signals	X X	X X X	In Progress In Progress In Progress

- **Work to be completed as part of current SHA projects**
- **Done/In Progress = At least one but not all projects completed**



High Incidence Areas: Rockville Pike

Background

- Rockville Pike from Halpine Road to Hubbard Drive
- PRSA conducted in June 2009
- High incidents of collisions with seniors and bicyclists

Observations

- Narrow sidewalks
- Multiple access points
- Long distance between controlled crossings



**2008 and 2009 Pedestrian Collision Comparison
In and Around the Rockville Pike HIA**



2004	2005	2006	2007	2008	2009	Total
4	11	4	3	9	8	39



Rockville Pike HIA: Planned Improvements

Improvement	MCDOT	MDSHA	Status
Short term improvements (0-6 months) –Replace pedestrian push buttons –Repair streetlights and bus shelter lights –Trim foliage –Enhanced signing –Re-stripe / modify crosswalks			
	X	X	In Progress/Done
		X	In Progress
	X	X	Done
	X	X	Done/In Progress
	X	X	Done/In Progress
Mid term improvements (6-18 months) –Upgrade to countdown pedestrian signals –Extending curbs and median –Enhanced / additional lighting –Minor sidewalk enhancements –Traffic enforcement –Pedestrian education program			
	X	X	In Progress
	X	X	In Progress/Done
	X		In Progress
	X	X	In Progress
	X		Ongoing
	X		In Progress
Long term improvements (18+ months) –Relocating / modifying business access points –Major sidewalk enhancements (widening) –Reconstruct / modify traffic signals			
		X	Pending
	X	X	Pending
		X	Done/In Progress

- **Work to be completed as part of current SHA projects**
- **Done/In Progress = At least one but not all projects completed**



High Incidence Areas: Four Corners

Background

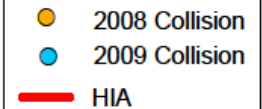
- Intersection of Colesville Road and University Boulevard
- PRSA conducted in Jan 2010
- Montgomery Blair HS

Observations

- Large student population
- Many pedestrians cross mid-block
- Numerous commercial access points
- Heavy bus transit usage



**2008 and 2009 Pedestrian Collision Comparison
In and Around the Four Corners HIA**



2004	2005	2006	2007	2008	2009	Total
2	4	4	7	5	0	22



Four Corners HIA: Planned Improvements

Improvement	MCDOT	MDSHA	Status
Short term improvements (0-6 months) –Repair streetlights and bus shelter lights –Trim foliage –Enhanced signing – Re-stripe / modify crosswalks –Enact turn restrictions –School zone designation & signing	X X X	X X X X X	Done/In Progress Done In Progress In Progress In Progress Done/In Progress
Mid term improvements (6-18 months) –Enhanced / additional lighting – Minor sidewalk enhancements – Upgrade to countdown pedestrian signals –Traffic enforcement & education	X X X X	X X	In Progress In Progress In Progress Ongoing
Long term improvements (18+ months) –Relocating / modifying business access points –Major sidewalk enhancements – Reconstruct / modify traffic signals	X X X	X X X	Pending Pending In Progress

- **Work to be completed as part of current SHA projects**
- **Done/In Progress = At least one but not all projects completed**



High Incidence Areas: Reddie Drive

Background

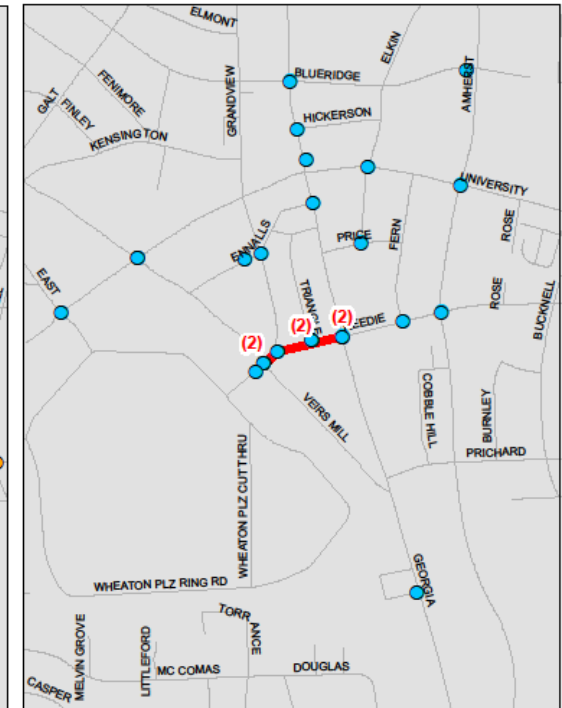
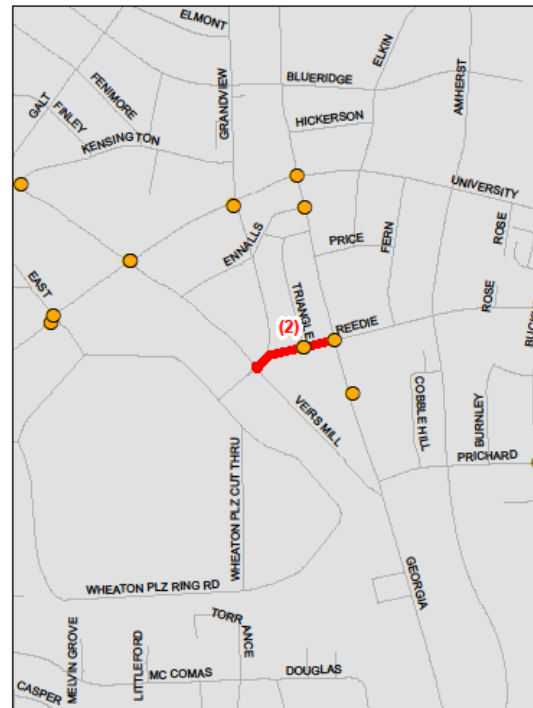
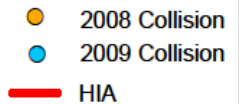
- Reddie Drive from Georgia Avenue to Veirs Mill Road in Wheaton CBD
- PRSA conducted in April 2010
- 1st County roadway PRSA

Observations

- Mid-block crossing encouraged by adjacent site layouts
- Numerous pedestrian/vehicle conflicts
- Many pedestrians cross at non-designated locations



**2008 and 2009 Pedestrian Collision Comparison
In and Around the Reddie Drive HIA**



2004	2005	2006	2007	2008	2009	Total
4	2	0	3	3	7	19



Reedie Drive: Planned Improvements

Improvement	MCDOT	MDSHA	Status
Short term improvements (0-6 months) –Repair streetlights and bus shelter lights –Re-stripe / modify crosswalks –Improve drainage grates for cyclists	X X X	X	Done In Progress Done
Mid term improvements (6-18 months) –Enhanced / additional lighting –Upgrade audible pedestrian signal –Streetscape Improvements –Median extensions and pedestrian refuge areas –Traffic enforcement & education program	X X X X	X X	In Progress In Progress In Progress In Progress
Long term improvements (18+ months) –Relocating / modifying business access points	X		Pending

- **Work to be completed by private developer**
- **Done/In Progress = At least one but not all projects completed**



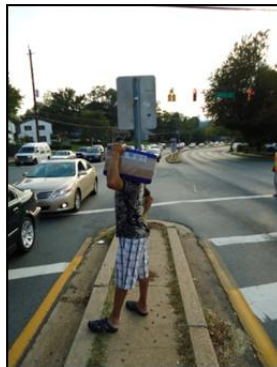
High Incidence Areas: Randolph Road

Background

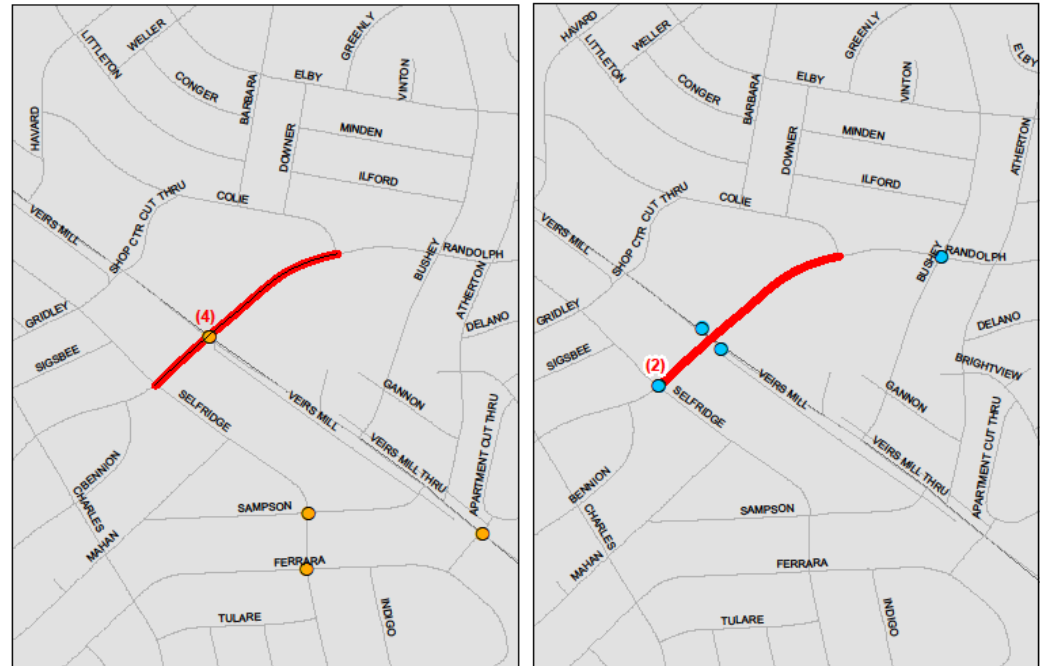
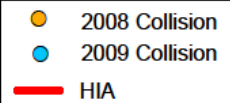
- Randolph Road from Colie Drive to Selfridge Road
- PRSA conducted in Sept 2010
- 2nd County roadway PRSA

Observations

- Heavy pedestrian/bicycle demand and heavy transit usage
- Numerous pedestrian/vehicle conflicts
- Both drivers and pedestrians fail to obey traffic rules



2008 and 2009 Pedestrian Collision Comparison In and Around the Randolph Road HIA



2004	2005	2006	2007	2008	2009	Total
3	3	2	1	4	4	17



High Incidence Areas: Total Expenditures

High Incidence Area	Total Expenditures						
	Expended / Encumbered			Additional Dollars Programmed*			Total Obligated to Date
	Eng	Educ	Enf	Eng	Educ	Enf	
Piney Branch	\$239K	\$41K	\$48K	\$200K	\$9K	\$125 K **	\$537K
Wisconsin	\$115K	-	\$47K	-	\$50K		\$212K
Georgia	\$72K	-	\$46K	\$130K	\$25K		\$273K
Rockville	\$50K	-	\$37K	\$12K	\$25K		\$124K
Four Corners	\$59K	-	-	\$20K	\$25K		\$104K
Reedie	\$54K	-	-	-	\$25K		\$79K
Randolph	N/A						N/A
Totals	\$589K	\$41K	\$178K	\$362K	\$159K	\$125K	\$1.33M + \$125K TBD = \$1.45 M
	\$808K			\$646K			

Expenditures to date (as of 10/1/2010), includes studies, construction, education and enforcement.

• *Only reflects items for which decision to implement has been finalized*

• ***Distribution to be determined by Police Department*

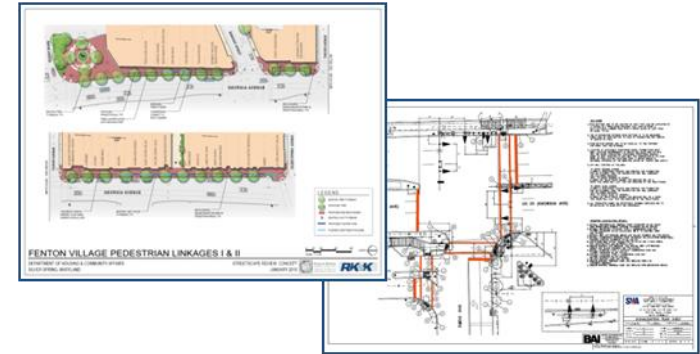


High Incidence Areas Strategy: DOT Successes and Lessons Learned

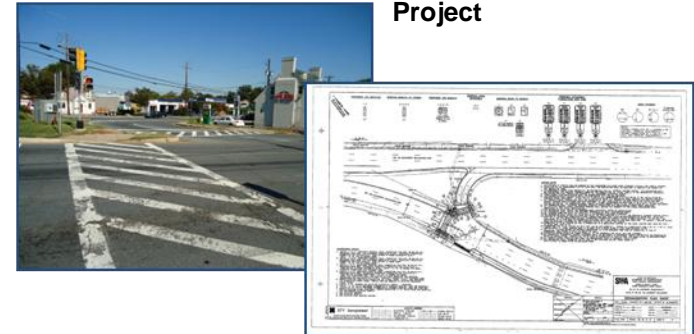
Successful Strategies

- Fostering Interagency and Inter-Departmental Partnerships
 - Retrofit improvements in anticipation of future SHA projects (i.e., countdown pedestrian signals)
 - Bring SHA on as an equal partner in the audit process and administration
- Leveraging Other Projects
 - Georgia Avenue Traffic Signal Upgrade / Fenton Village Streetscape Project
 - Piney Branch Road Traffic Signal Reconstruction
 - Potential developer funded projects (i.e., Reedie Drive median)

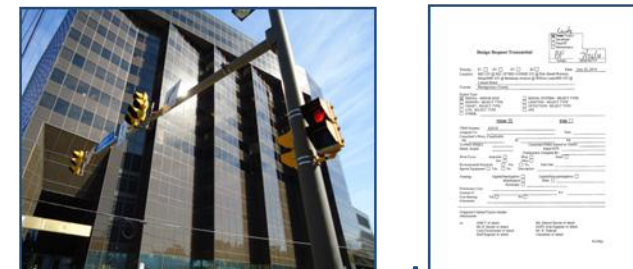
Fenton Village Streetscape / Georgia Ave Traffic Signal Upgrade Project



MD 193 West Crossover APS/CPS Upgrade Project



MD 355 (Bethesda) CPS Upgrade Project



High Incidence Areas Strategy: DOT Successes and Lessons Learned

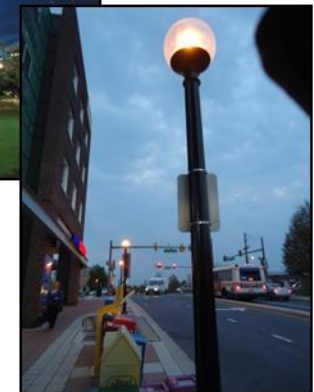
Lessons Learned

- State Coordination is Paramount
 - County Improvements on State Roads = Longer Implementation Process
 - Additional administrative processes
 - Including SHA in the Process Promotes Early Consensus
 - Participation in Audits
 - Approval of observations and recommendations
- Addressing HIAs on County Roadways allows for quicker implementation

Reedie Drive PRSA



Randolph Road PRSA



High Incidence Areas Strategy: DOT Successes and Lessons Learned

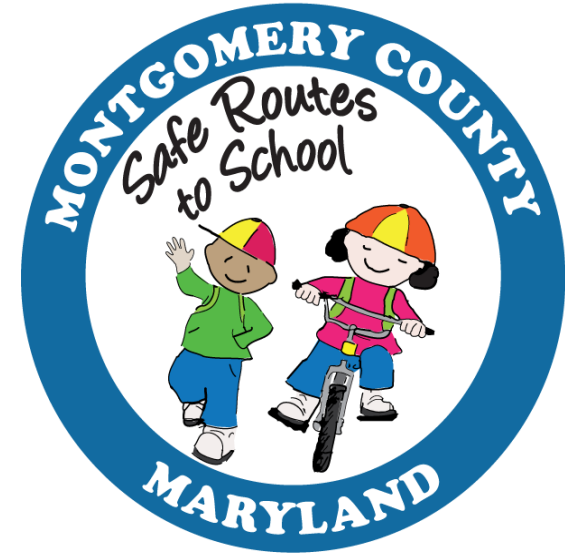
Lessons Learned

- Initial implementation timeframe was overly ambitious
 - The cost of all identified possible improvements at each HIA often exceeds the amount allocated
 - Needed to develop new processes to get things done
 - Leveraging other planned projects within the HIA often extends the process
 - Scope of the identified improvements is unique to every project
- Having designated staff is critical to implementation
 - Day-to-day coordination and program management is required to make progress in a timely manner
 - Coordination with SHA and other County Department
 - Consultant contract management
 - Project Administration (agreements, design, construction)
 - Public Outreach



Safe Routes to School Overview

- Montgomery County's SRTS program started in 2005
- Over 50 schools have had comprehensive assessments conducted and improvements implemented
- More than 100 additional specific safety concerns have been evaluated and addressed
- Demonstrated success of reducing pedestrian collisions
- Focuses resources on demographic group that benefits most from improved pedestrian safety and mobility – all kids walk and bike



Safe Routes to School Priority Schools – Engineering Prioritization

	School	Number of Crashes
1	Flower Valley ES	0
2	Stone Mill ES *	1
3	Newport Mill MS	0
4	Earle B. Woods MS **	2
5	Kingsview MS *	1
6	Oakland Terrace ES	0
7	Rock Creek Forest ES	1
8	Bells Mill ES	3
9	Lucy V Barnsley ES	0
10	Woodlin ES **	1
11	Georgian Forest ES *	0
12	Jackson Road ES **	5

	School	Number of Crashes
13	South Lake ES	6
14	Belmont ES	0
15	E. Brooke Lee MS	0
16	Bradley Hills ES	1
17	John Poole MS	0
18	Rosa Parks MS *	0
19	Walter Johnson HS	3
20	Weller Road ES	2
21	Argyle MS **	8
22	Stonegate ES	0
23	Thurgood Marshall ES *	0
24	Westbrook ES **	0



Safe Routes to School Priority Schools – Pedestrian Collision Prioritization

	School	Number of Crashes
1	New Hampshire Estates ES	37
2	Bethesda ES	33
3	Gaithersburg ES	12
4	Argyle MS**	8
5	White Oak MS	8
6	Olney ES*	6
7	South Lake ES	6
8	Oak View ES	6
9	Rolling Terrace ES	6
10	Jackson Road ES**	5
11	Harmony Hill ES	5
12	Eastern MS	5

	School	Number of Crashes
13	A. Mario Loiederman MS	5
14	Stedwick ES	5
15	Rock Creek Forest ES	4
16	Glen Haven ES	4
17	Greencastle ES	4
18	Rosemont ES	4
19	Bells Mill ES	3
20	Montgomery Village MS	3
21	Neelsville MS	3
22	Ronald A. McNair ES	3
23	Montgomery Knolls ES	3
24	Forest Knolls ES	3

Education: 11 schools previously designated in grant +
schools identified as having ped collisions within 1/4 mile of school



Safe Routes to Schools Prioritization

- **ENGINEERING: Reprioritized to weight pedestrian collisions**
 - Weighted scores with pedestrian collisions - used to prioritize schools
 - Factored into engineering evaluation criteria for overall score
 - Safe Routes to School (SRTS) list reprioritized using crash data weighting factor
 - SRTS Grant Applications now reflect reprioritization
- **EDUCATION: Increased at schools with high ped collisions**
 - SRTS Coordinator working with 109 Elementary Schools and 31 Middle Schools
 - SRTS Coordinator placing highest priority on schools with ped collisions within 1/4 mile
- **ENFORCEMENT: Increase at schools with high ped collisions**
 - Enforcement actions targeted at schools with higher number of ped collisions



Safe Routes to School: Collision Update

School Name	Before Treatment		After treatment*	
	Time period	# of ped collisions	Time period	# of ped collisions
Stone Mill ES	3/2006 – 3/2009	2	10 mos.	0
Olney ES	2/2006 – 2/2009	1	11 mos.	1
Georgian Forest ES	3/2006 – 3/2009	6	10 mos.	0
Kingsview MS	3/2006 – 3/2009	12	10 mos.	0
Thurgood Marshall ES	3/2006 – 3/2009	1	10 mos.	0
Martin Luther King MS	7/2006 – 7/2009	11	6 mos.	0
Flower Hill ES	6/2006 – 6/2009	7	7 mos.	0
Greenwood ES	4/2006 – 4/2009	2	9 mos.	0
Rosa Parks MS	4/2006 – 4/2009	2	9 mos.	1
Cannon Road ES	6/2006 – 6/2009	3	7 mos.	0
Clearspring ES	4/2006 – 4/2009	1	9 mos.	0
William B. Gibbs ES	9/2006 – 9/2009	2	4 mos.	0
Total		50		2

•Number of collisions as of December 2009. After treatment assessment period is still underway. All data has been supplied by the Department of Transportation and the Police Department.



Safe Routes to School: Engineering

School Zone Pedestrian Treatments Activities

	FY07	FY08	FY09	FY10	FY11	Total
Partial Assessments	19	25	21	16	4	85
Comprehensive Assessments	9	10	13	11	8	51
Improvements Implemented	28	35	34	19	0	116

School Zone Pedestrian Treatments

Budget and Expenditures

	FY09	FY10	FY11
Budgeted	\$80,000	\$330,000	\$156,240
Expended	\$80,000	\$159,000 *	-

** Reduced due to savings plan and spending freeze*



Safe Routes to School: Education and Enforcement

Education & Enforcement Activities			
FY09 - Outreach - Meetings held (School Administrator and Parent)	28	FY10 - Outreach - Meetings held (School Administrator and Parent)	19
FY09 - Schools Observed	34	FY10 - Schools Observed	7
FY09 - Incentives Distributed	220	FY10 - Incentives Distributed	12,880
FY09 - Citations Given	N/A	FY10 - Citations Given	163

Education & Enforcement Budget and Expenditures					
FY09			FY10		
	Budget	Actual		Budget	Actual
Education	\$47,724	\$47,396	Education	\$59,662	\$51,738
Enforcement	\$7,362	\$1,078	Enforcement	\$11,616	\$8,850



Safe Routes to School Strategy: DOT Successes and Lessons Learned

Successful Strategies

- Involve public school transportation representative, principal, and safety officer in assessments
- Prioritize schools with lowest safety scores
- Focus on effective short-term, small-scale improvements
- Developing working relationship between SRTS Coordinator and school officials leads to effective outreach to students and parents at individual schools

Lessons Learned

- Student drop-offs and pick-ups are a major contributor to safety concerns
- Improvements directly focused on the school provide benefits for the broader pedestrian population



Traffic Calming: Collisions Update

Project Name	Completion Date	Speeds (MPH)		
		Posted	Avg. Before	Avg. After
Connecticut Ave	July-07	40	48	40
Aspen Hill Dr	May-08	30	35	34
Arcola Ave	Aug-08	30	42	32
Fairland Rd	July-09	40	53	42
Calverton Blvd	July-09	30	41	35
Lockwood Dr	July-09	30	40	30
Sligo Ave	Sept-09	30	34	31
Carroll Ave	Nov-09	25	33	27
Spartan Rd	Nov-09	30	40	33
Dale Dr*	Aug-10	30	39	34

Collisions 3 Years Before Treatment	Time period Since Treatment	Collisions Since Treatment
10	2 yrs. 6 Months	3
14	1 Year 8 Months	0
3	1 Year 5 Months	0
2	6 mos.	0
1	6 mos.	0
0	6 mos.	0
1	4 mos.	1
2	2 mos.	0
TBD	2 mos.	0
N/A	# mos.	N/A

•Dale Drive too recent for crash data collection

Speed decline ≥ 5 mph



Traffic Calming: Typical Treatments

Typical Traffic Calming Treatments

- Pedestrian Refuge Islands
- Bump-Outs / Curb Extensions
- Chicanes / Chokers
- Enhance signing and marking

Before



After



Before



After



Wrap-Up

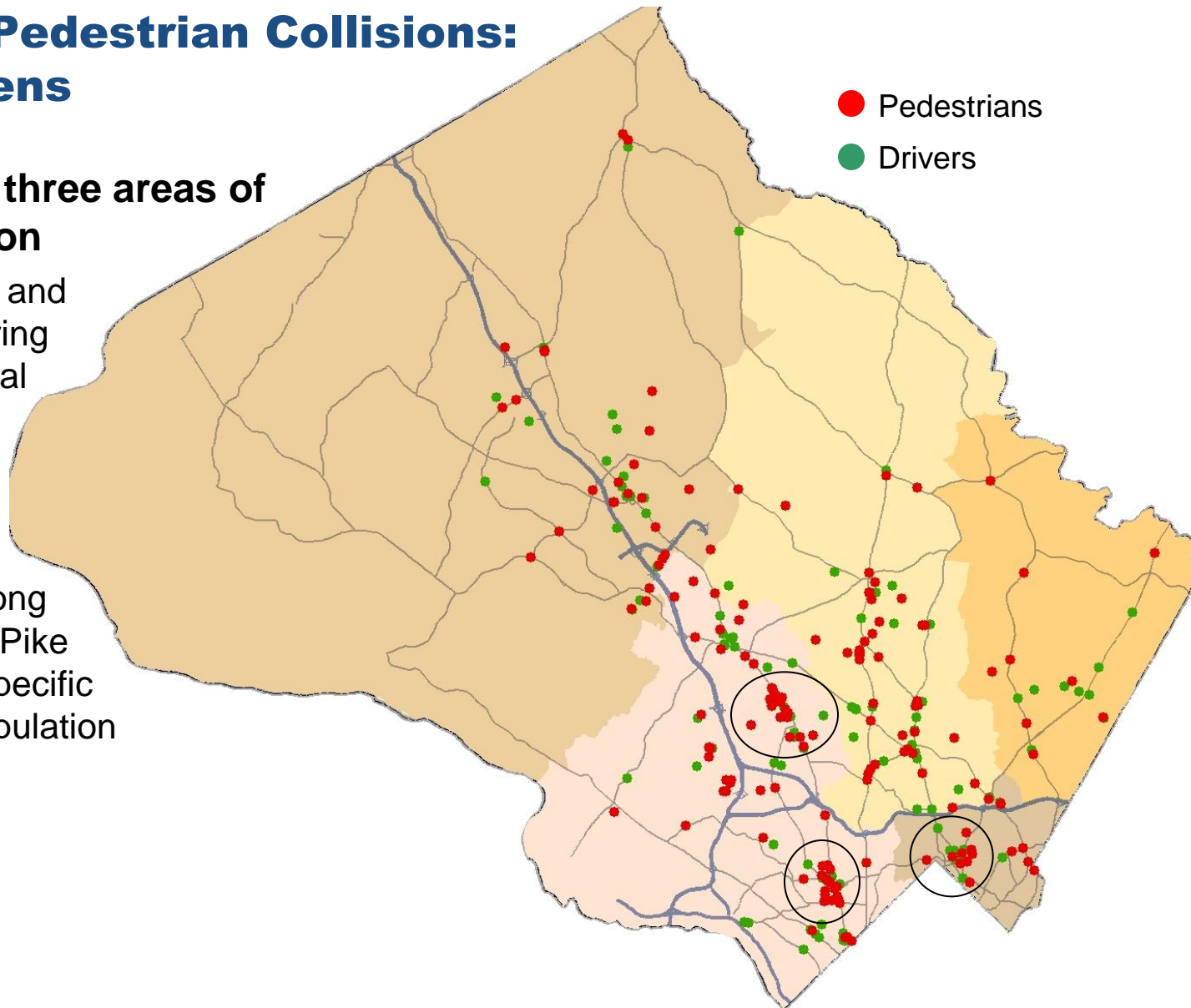
- Follow-up items



Patterns in Pedestrian Collisions: Senior Citizens

- **Map shows three areas of concentration**

- Bethesda and Silver Spring are general high incidence areas
- The area circled along Rockville Pike is more specific to this population



Rockville Pike HIA

